

Outdoor Lighting Standards

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Introduction and Purpose

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California Energy Commission



CEC Research Team

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Overview

Charles Eley, FAIA, PE
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Current Situation

- Outdoor lighting uses lots of electricity and contributes significantly to peak electric demand.
- Poorly designed outdoor lighting causes community and social environmental impacts such as light trespass and light pollution.
- The *Advanced Lighting Guidelines*^[1] (available at www.NewBuildings.org) have more information.



Project Goals

Primary goal:

- Conserve energy and reduce electric peak demand.

Other possible benefits include:

- Improve the quality of outdoor lighting.
- Reduce the impacts of poor outdoor lighting systems
- Teach users about effective technologies and techniques for lighting.



The Legislative Mandate

- California Legislature passed Senate Bill 5X, requiring the Commission to adopt energy efficiency standards for outdoor lighting.
- The Commission plans to adopt outdoor lighting standards for Title 24 or other rules.
- Portions adopted into Title 24 expected to go into effect in conjunction with the 2005 California Building Code.



Existing Outdoor Standards

- California energy efficiency standards for new buildings are limited for exterior lighting.
 - Lamps rated greater than 100 watts have an efficacy at least 60 lumens per watt.
 - Exterior lighting for buildings subject to Title 24 must use a photocell or time switch.
 - Unconditioned spaces are presently unregulated.
- ASHRAE/IESNA Standard 90.1-1989 has been adopted for federal buildings and as the energy efficiency standard in many states.



Commission Proposed Measures

Measures are proposed by the CEC and the contractor team for the following outdoor lighting applications:

- Unconditioned Buildings.
- Parking Lot Lighting.
- Building Grounds Lighting.
- Building Entrance and Exit Lighting.
- Building Facades.
- Lighting Under Exterior Canopies.
- Outdoor Sales Lighting.
- Billboard and Outdoor Signage Lighting.
- Public Right of Way Lighting.



Additional Topics

